



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,097	10/31/2001	Bogdan Jakobik	2676-000008/US	9329
27572 7590 04/27/2009 HARNESSE, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303			EXAMINER PASCAL, LESLIE C	
			ART UNIT 2613	PAPER NUMBER
			MAIL DATE 04/27/2009	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/004,097

Applicant(s)

JAKOBIK ET AL.

Examiner

Leslie Pascal

Art Unit

2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 9-5-07 and board decision of 1-5-09.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-9,11-13 and 15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12 is/are allowed.
- 6) ☒ Claim(s) 1,3-8, 11, 13 and 15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Decision on Appeal

1. Examiner respectfully notes the decision by the Board of Patent Appeals and Interferences (BPAI) on 05 January 2009 to **reverse** the rejection of **claims 1, 3-5, and 11** under 35 U.S.C. 103(a) as being unpatentable over Nakamoto in view of Applicants' admitted prior art, from the Final Rejection mailed on 05 October 2005. Accordingly, this rejection is currently withdrawn. However, these claims are still unpatentable in view of the teachings from Sakamoto et al (2002/004862, hereinafter "Sakamoto") and Zhou et al (6445850, hereinafter "Zhou") and Huber (2002/0063929). Rejections based on these reference(s) follow.
2. Please note that the examiner handling this case has changed. All responses should be addressed to Examiner Leslie Pascal.
3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
4. Claims 1, 3-9, 11, 13 and 15 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In regard to claims 8, 11 and 13; it is unclear what is meant by "manual" routing in the specification. It is unclear what is providing this feature. In regard to claims 1 and 5; the specification does not teach how a single compensation mechanism

Art Unit: 2613

provides gain flattening, transient suppression and dispersion compensation. The specification does not teach how this is done dynamically. The only mention in the specification of compensating of gain flattening, transient suppression and dispersion compensation is in applicants' paragraph 19 which says that such techniques are well known. There are no details of how they are provided. It appears from the applicants' specification that either:

1) it is so well known that the applicant does not need to describe it (which means that it is so obvious that the examiner is using the rational that if it is so well known and obvious that the applicant does not have to describe it, it is well known to one of ordinary skill in the art) or

2) the applicant has a non-enabling disclosure.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 8-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear what is meant by "manually routing". In regard to claim 9, it is unclear what is meant by "remaining intermediate optical signals". What are they remaining from? It is unclear what signals this is referring to.

7. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the signal impairment compensation mechanism of claims 4-5 at the input of the first set of multiplexers (see

Art Unit: 2613

particularly that there are no compensation means at the input of the applicants' multiplexer at the far left of figure 2. There are no compensation means provided for the data signals as claimed. There are compensation means for the band and sub band signals, but not in the input channel signals as claimed). With regard to claims 5-9 and 11, the method step requires performing signal impairment compensation which should have compensation means shown in figures 3-6. In order for the method steps to be provided, the figures should show elements required to provide the method steps. These elements must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

Art Unit: 2613

the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
9. Claims 1 and 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto et al (2002/004862, hereinafter "Sakamoto") in view of Zhou (6445850).

Sakamoto teaches an optical transport line residing in the optical transport network and operable to carry optical signals (optical transmission path L, figure 1), a multiplexing component (11, figure 1) which receives and combines a plurality of optical signals and launch the signals into the optical transport line L, a plurality of impairment compensation mechanisms associated with the multiplexing component (figure 1, OS which is shown in detail in figure 6). Element OS provides compensation for amplitude of each wavelength (41E), dispersion compensation (41D) and adding chirp in order to add compensation (41C, paragraph 47 in which he teaches adding chirp based on

Art Unit: 2613

feedback to compensate the signal). It is well known to add chirp in order to suppress transient noise and would have been obvious since Sakamoto et al is concerned with compensation of the signal and uses chirping and feedback to provide compensation (for all compensation, see also the applicants' statement that it is well known technique). Although he does not specify that the variable attenuator (41E) provides dynamic gain flattening, he says that the attenuation is controlled to provide a better OSNR and BER (paragraph 77). He also teaches that he is concerned with gain flattening (paragraphs 128 and 134). It would have been obvious to use the attenuation in conjunction with the amplifiers to provide proper gain flattening at the output in order to provide signals of different wavelengths that are of equal gain in order to avoid signals with higher amplitude overpowering or causing noise to signals with lower amplitudes which would interfere with BER and OSNR. Although Sakamoto does not specifically teach that the multiplexer has plural layers, Zhou teaches that it is well known to use cascading multiplexers in order to provide better compensation among different layers (see figure 3 he combines first layers sub bands which are each of band1.1-band 1.I and band2.1-2.J and bandM.1-bandM.K and then combines second layer which are the bands input to band combiner 266). It would have been obvious to combine the signals of Sakamoto as sub bands and then bands (which provide the two layers) in order to provide proper compensation to the layers as taught by Zhou by compensation means (254.1-264.M for one layer and 268 for another layer). It would have been obvious to replace the multiplexer of Sakamoto with the elements of figure 2c of Zhou in order to provide specific compensation for specific bands. In regard to

Art Unit: 2613

claims 3-4, Zhou teaches a multiplexer (266) with input compensation means (264.1-264.M) and output compensation means (266). Although Zhou does not teach detailed specifics about his compensation means, it would have been obvious to compensate for gain flattening, transient suppression and dispersion compensation in the compensation means of Zhou. Zhou teaches compensation at different levels in his system. It would have been obvious in view of Sakamoto's teaching that different compensation can be provided to a signal in each of the compensating elements of Zhou (as well as the applicants' admission that such compensation is well known-paragraph 19, the only paragraph in the applicants' specification which deals with the types of compensation says that it is well known and that other forms of compensation may be used). In addition, each section of a communication system adds noise to a system, it is well known to compensate at each section in order to avoid the problems due to noise accumulation at each section. At present, the examiner's position is that such compensation is well known as disclosed by the applicant (as well as Sakamoto). If in the applicants' response, there is an argument that it is not well known to provide compensation for gain flattening, transient suppression and dispersion compensation, it would appear that the applicant has a nonenabling disclosure (see the above 112, first paragraph rejection).

10. Claims 5-9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huber (2002/0063929) in view of Sakamoto and further in view of Zhou.

In regard to claim 5, figure 3 of Huber (2002/0063929) is similar to the top portion of figure 1 of Sakamoto used in the above rejection. Huber teaches that it is well known

Art Unit: 2613

to use a switching device to provide plural intermediate signals (see figure 2 of Huber). Huber teaches receiving a plurality of data signals (from elements 12 in figure 3, shown in detail in figure 2), selectively combining the plurality of optical data signals to form a plurality of intermediate optical signals (from elements 44 after passing through elements 48 of figure 5) and combining the plurality of intermediate signals (42) and launching the signals over optical transport network (24, 32). Although Huber does not specifically teach details of his transmitter, Sakamoto teaches that it is well known to provide compensation to each of the plurality of data signals (as discussed in the above rejection). Sakamoto teaches a plurality of impairment compensation mechanisms associated with each data signal (figure 1, OS which is shown in detail in figure 6). Element OS provides compensation for amplitude of each wavelength (41E), dispersion compensation (41D) and adding chirp in order to add compensation (41C, paragraph 47 in which he teaches adding chirp based on feedback to compensate the signal). It is well known to add chirp in order to suppress transient noise and would have been obvious since Sakamoto et al is concerned with compensation of the signal and uses chirping and feedback to provide compensation (for all compensation, see also the applicants' statement that it is well known technique). Although he does not specify that the variable attenuator (41E) provides dynamic gain flattening, he says that the attenuation is controlled to provide a better OSNR and BER (paragraph 77). He also teaches that he is concerned with gain flattening (paragraphs 128 and 134). It would have been obvious to use the attenuation in conjunction with the amplifiers to provide proper gain flattening at the output in order to provide signals of different

Art Unit: 2613

wavelengths that are of equal gain in order to avoid signals with higher amplitude overpowering or causing noise to signals with lower amplitudes which would interfere with BER and OSNR. It would have been obvious to provide compensation to the signals of Huber as taught by Sakamoto (and/or according to the applicants' statement that it is well known) in order to reduce noise in the signals. Although Huber does not specifically teach compensating the intermediate signals (also the launched signal with regard to claim 11), it is well known to compensate at different sections of a communications system in order to compensate for specific types of signals or elements that an optical signals has been through as taught by Zhou (as used in the rejection above). In addition, each section of a communication system adds noise to a system, it is well known to compensate at each section in order to avoid the noise accumulated and amplified at each section. It would have been obvious to provide different types of compensation in the compensation means of Zhou as taught by either Sakamoto or based on the applicants' admission that such techniques are well known. The only mention in the specification about the details of the gain flattening, transient suppression and dispersion compensation are in paragraph 19 of the specification. The applicant does not disclose specific means that provide these functions or how it is provided and only says that these are provided by "techniques well known in the art". The last sentence of paragraph 19 also teaches that these are not critical. At present, the examiner's position is that such compensation is well known as disclosed by the applicant (as well as Sakamoto). If in the applicants' response, there is an argument that it is not well known to provide compensation for gain flattening, transient

Art Unit: 2613

suppression and dispersion compensation, it would appear that the applicant has a nonenabling disclosure (see the above 112, first paragraph rejection). In regard to claim 6, Huber teaches separating the signal into the plurality of intermediate signals (element 36 and/or 38), plurality of transport lines (24, 28, and/or 32). In regard to claim 7, he teaches a switch in figure 5. In regard to claim 8, he teaches an add/drop device in figure 4. This is made in view of the 112 rejection above. Since it appears that the applicant uses an add/drop device to provide the manual routing, it appears obvious that Huber provides the manual routing. If this is not what is meant by the applicant, it is well known for a person to manually switch signals when there is a fault in the system in order to ensure that the signals will be received by the proper receiver. In regard to claim 9, in figure 5, there appear to be "remaining intermediate signals". Since one of the separated intermediate signals (for example $16_{1,1}$ from 36) is routed in claim 6, the remaining signals ($16_{1,n} - 16_{n,1}$) are separated by element 38 and routed through a plurality of switches (48) would obviously read on claim 9.

11. Claim 12 is allowed.

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Boertjes et al (2004/0151426) teaches compensation in different layers of an optical system. Bai et al (2006/0263099) teaches a system with compensation.

Art Unit: 2613

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leslie Pascal whose telephone number is 571-272-3032. The examiner can normally be reached on Monday- Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth N. Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Leslie Pascal/
Primary Examiner
Art Unit 2613

/Kenneth N Vanderpuye/

Supervisory Patent Examiner, Art Unit 2613


MARK R. POWELL
DIRECTOR
TECHNOLOGY CENTER 2600